

Technical Sheet

**FRUL
SIDER**

**SIMPSON
StrongTie**

X3 High Performance Long Plug

The X3 plugs in Ø8 and Ø10 mm versions in combination with countersunk / hexagon head screws are approved for multiple fixings in concrete and masonry.

Features

Material

Plug: nylon

Screw: white zinc plated steel

Benefits

- Extraordinary performance on all base materials.
- Up to 3 embedment depths
- Extreme versatility and significant reduction in installation time.
- Increased expansion
- Designed for facades and heavy carpentry.

Applications

Applications

- Ventilated facades
- Steel carpentry
- Wood carpentry

Suitable for

Non-cracked concrete

Solid brick

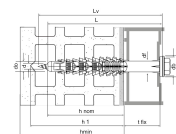
Honeycomb brick

- Cell like clay brick
- Lightweight honeycomb brick
- Hollow dense aggregate block
- Hollow light aggregate block
- Aerated concrete
- Solid stone

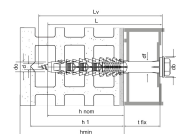


Technical Data

Reference	Nylon fixings dimensions										
	Info product									Tun / DB nr.	NOE nr.
	Product Reference	Plug[mm]	Screw[mm]	Reduced fixture thickness [tf _x][mm]	Standard fixture thickness [tf _x][mm]	Max fixture thickness[mm]	Bit	Qty per box[pcs]	Qty per outer box[mm]		
64601B0810000	X3	8x100	6x108	60	50	-	PZ3	50.0	500.0	-	-



Reference	Nylon fixings dimensions									Nylon fixings Installation data
	Info product									Installation data
	Product Reference	Plug[mm]	Screw[mm]	Reduced fixture thickness [tf _x][mm]	Standard fixture thickness [tf _x][mm]	Max fixture thickness[mm]	Bit	Qty per box[pcs]	Qty per outer box[mm]	Ø drilling fixture[mm]



Reference	Nylon fixings dimensions											Nylon fixings Installation data
	Info product											Installation data
	Product Reference	Plug[mm]	Screw[mm]	Reduced fixture thickness [tfix] [mm]	Standard fixture thickness [tfix] [mm]	Max fixture thickness[mm]	Bit	Wrench size[mm]	Built-in washer	Qty per box[pcs]	Qty per outer box[mm]	Ø drilling fixture[mm]

* Only for aerated concrete
NOTE: The thickness of the plaster must be included in the fixing thickness t_{fix}

X3 High Performance Long Plug



Product Dimensions Large Rim Plug with Hex-head screw

Reference	Nylon fixings dimensions										
	Info product										
	Product Reference	Plug[mm]	Screw[mm]	Reduced fixture thickness [t _{fix}][mm]	Standard fixture thickness [t _{fix}][mm]	Max fixture thickness[mm]	Bit	Wrench size[mm]	Built-in washer	Qty per box[pcs]	Qty per outer box[mm]
*Only for aerated concrete NOTE: The thickness of the plaster must be included in the fixing thickness t _{fix}											

Design capacities - single anchor - no edge distances

Reference	Nylon fixings Loads							
	Design capacities - single anchor - no edge distances							
	Design capacity							
	Bending moment - MRd[Nm]	Tension - NRd (1)[kN]				Shear - VRd (1-2)[kN]		
Non-cracked concrete C12/15[kN]		Non-cracked concrete C16/20[kN]	Autoclaved aerated concrete AAC[kN]	Solid brick[kN]	Non-cracked concrete C12/15[kN]	Non-cracked concrete C16/20[kN]	Autoclaved aerated concrete AAC[kN]	Solid brick[kN]

1. The design loads loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing $s \geq 15$ cm (any diameter) or with a rebar spacing $s \geq 10$ cm, if the rebar diameter is 10mm or smaller.

2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges ($c \leq \max [10 \text{ hef}; 60d]$) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.

3. Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

*Not covered by ETA-11/0080

X3 High Performance Long Plug

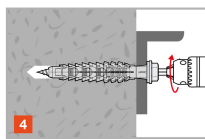
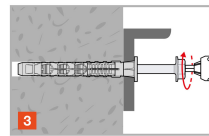
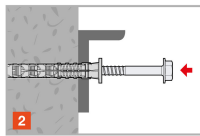
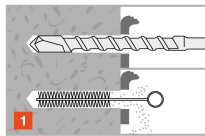
Recommended capacities - single anchor - no edge distances

Reference	Nylon fixings Loads								
	Design capacities - single anchor - no edge distances								
	Design capacity								
	Bending moment - MRd[Nm]	Tension - NRd (1)[kN]				Shear - VRd (1-2)[kN]			
		Non-cracked concrete C12/15[kN]	Non-cracked concrete C16/20[kN]	Autoclaved aerated concrete AAC[kN]	Solid brick[kN]	Non-cracked concrete C12/15[kN]	Non-cracked concrete C16/20[kN]	Autoclaved aerated concrete AAC[kN]	Solid brick[kN]

1. The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of $\gamma_F=1.4$. The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing $s \geq 15$ cm (any diameter) or with a rebar spacing $s \geq 10$ cm, if the rebar diameter is 10 mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges ($c \leq \max [10 \text{ hef}; 60d]$) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

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Installation



Spacings and edge distances

Reference	Nylon fixings dimensions	Nylon fixings Installation data		
	Info product	Spacings and edge distances		
	Product Reference	Concrete thickness [mm]	Minimum thickness of support [mm]	Minimum edge distance [mm]
* Not included in the price		2/15		

Spacings and edge distances

See full table online [➔](#)



Installation data

Reference	Nylon fixings Installation data		
	Installation data		
	Ø drilling hole [mm]	Min. drill depth [mm]	Ø drilling fixture [mm]